cell. Given certain or all of this information, the mobile station 16 may control the frequency of measurements and the channels to measure based on its relative position to a single base station, relative position between two base stations, or its relative position within a defined area or cell.

A4

In the claims:

Cancel claims 27-30.

Amend claim 5 to read as follows:

A5

5. The channel selection method of claim 4 wherein said position of said at least one additional base station is included in a neighbor list transmitted to said mobile station by said first base station.

Remarks

The specification has been amended to correct minor typographical errors without adding any new matter thereto.

For the claims, the Examiner has rejected claims 1-49 under §103 as being unpatentable over Henry in view of Imaseki and O'Neal. Applicant respectfully traverses these rejections as explained further below, and request reconsideration of the claims.

Claims 1-12

Independent claim 1 requires performing channel quality measurements "wherein the frequency of performing said channel quality measurements is a function of [the] position of said mobile station." Applicant readily admits that Henry teaches the concept of performing channel quality measurements of signals transmitted from one or more base stations. However, Applicant disagrees that Henry teaches the concept of

varying the frequency of performing said channel quality measurements (i.e., changing the time period between successive measurements) as a function of the position of the mobile station, as asserted by the Examiner. For this latter assertion, the Examiner points to column 9, line 5 – column 10, line 10. A careful reading of this passage finds no reference to the idea of varying the frequency of performing channel quality measurements as a function of position. Applicant does note, however, that the passage includes the word "frequency". However, the word "frequency" is used in the passage solely for the purpose of discussing the radio frequency, not the frequency of the occurrence of the channel quality measurements (e.g., the number of measurements in a given time and/or the time period between successive measurements). Thus, at most, Henry teaches that channel quality measurements can be taken on different radio frequencies, but makes absolutely no showing of varying the timing of the measurements as a function of the position of the mobile station. As is clear from a reading of Applicant's specification, the phrase "the frequency of performing said channel quality measurements" refers to the occurrence of the channel quality measurement itself, not the particular radio frequency being measured. It is respectfully submitted that Henry makes absolutely no showing on this point.

The Examiner asserts that Imaseki "discloses frequency of performing said channel quality measurements is a function of said position." In making this assertion, the Examiner points to column 4, line 10 – column 5, line 15 of Imaseki. This passage of Imaseki appears to disclose a method of limiting the particular radio frequencies scanned by the Imaseki mobile radio unit to the particular radio frequencies *a priori* assigned to the zone in which the mobile radio unit is located when certain strong signal strength conditions exist. There does not appear to be any teaching in Imaseki of changing the frequency of occurrence of performing channel quality measurements on those selected radio frequencies as a function of the position of the mobile radio unit.

Indeed, Imaseki appears to continuously monitor those channels by sequentially stepping through the radio frequencies in a ping-pong fashion. Thus, Imaseki, like Henry, teaches that different radio frequencies may be subjected to signal quality measurements, but simply does not disclose that the timing between the signal quality measurements, i.e., "the frequency of performing said channel quality measurements," is a function of the position of the mobile station.

In light of the above, it is apparent that neither Henry or Imaseki make the showings asserted by the Examiner. Indeed, it is abundantly clear that the Henry and Imaseki references completely fail to show the idea of varying the frequency of performing channel quality measurements as a function of the position of the mobile station, as claimed in claim 1. As such, Henry and Imaseki, alone or in combination, fail to show one or more limitations of independent claim 1. Therefore, it is respectfully submitted that independent claim 1, and its dependent claims 2-14, define patentable subject matter over the cited references and their allowance is requested.

With further regard to dependent claim 6, this claim includes a limitation that the "frequency of performing said channel quality measurements is a function of the mobility of said mobile station." As pointed out on page 11, lines 11-16, the term "mobility", as used in the claims, is a function of both position and time. Thus, claim 6 requires that the frequency of occurrence of performing the channel quality measurements be a function of both position and time with respect to the physical location of the mobile station. In an attempt to show this feature, the Examiner points to Henry column 6, lines 52-65. A careful reading of this passage discloses no teaching whatsoever with regard to the idea of varying the frequency of performing channel quality measurements as a function of both time and position of the mobile terminal. For instance, this passage of Henry makes no teaching of varying the frequency of the periodic signal quality measurements as a function of the "rate of change and position of the mobile station" as

disclosed in Applicant's specification page 11, lines 11-13. Nor does this passage of Henry make any suggestion with respect to varying the frequency of performing channel quality measurements "as a function of the amount of time the mobile station stays in one position," as disclosed in Applicant's specification page 11, lines 13-14. Thus, it is respectfully submitted that the Henry patent fails to make the teaching as suggested by the Examiner. As the Examiner points to no other reference or passage, it necessarily follows that the Examiner has completely failed to point to any teaching in the prior art of this concept. Accordingly, it is respectfully submitted that claim 6, and its dependent claims 7-8 define patentable subject matter over the cited art, even if independent claim 1 does not.

Claims 15-26

Independent claim 15 requires that the position of a mobile station be updated periodically, "wherein the frequency of said updating is a function of said position of said mobile station." For reasons similar to the logic expressed above with respect to independent claim 1, and contrary to the Examiner's assertion, it is respectfully submitted that neither Henry nor Imaseki show varying the frequency of any particular event as a function of the position of the mobile station. As such, Henry and Imaseki, either alone or in combination, fail to show one or more limitations expressly claimed in independent claim 15. Therefore, Applicant submits that independent claim 15, and its dependent claim 16-26, define patentable subject matter over the cited art, and their allowance is requested.

Further, with regards to dependent claim 20, this claim requires that the "frequency of updating said position is a function of the mobility of said mobile station." For logic similar to that expressed above with respect to claim 6, it is submitted that this claim defines patentable subject matter over the cited art and its allowance is requested.

Claims 27-30

With regards to claims 27-30, these claims have been cancelled, therefore rendering additional discussion of these claims moot.

Claims 31-37

Independent claim 31 includes a requirement that the control logic "vary the frequency of performing said channel quality measurements as a function of the position of said mobile station." For reasons similar to those expressed above with respect to independent claim 1, it is submitted that independent claim 31, and its dependent claims 32-37, define patentable subject matter over the cited art and their allowance is requested.

Further, with regards to independent claim 34, and its dependent claims 35-36, it is submitted that these claims define patentable subject matter over the cited art for the reasons stated above with respect to claim 6, and their allowance is requested even if independent claim 31 remains rejected.

Claims 38-43

Independent claim 38 includes a requirement of the control logic "varies the frequency of determining said position of said mobile station as a function of said position." For reasons similar to those expressed above with respect to independent claim 1, it is respectfully submitted that independent claim 38 and its dependent claims 39-43, define patentable subject matter over the cited art and their allowance is requested.

Further, with regards to dependent claim 41, it is respectfully submitted that this claim defines patentable subject matter over the cited art for the same reasons as expressed above with respect to dependent claim 6.

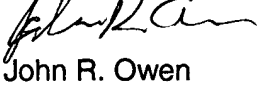
Claims 44-49

Independent claim 44 requires that the mobile station be controlled such that "the frequency of performing said [periodic] task is a function of said position of said mobile station." As pointed out above, it is respectfully submitted that neither Henry nor Imaseki show or suggest varying the frequency of performing a particular task as a function of position. Accordingly, it is respectfully submitted that independent claim 44, and its dependent claims 45-49 define patentable subject matter over the cited art and their allowance is requested.

Further, with regards to dependent claim 47, it is respectfully submitted that this claim defines patentable subject matter for similar reasons expressed above with respect to claim 6, and its allowance is requested even if the rejection of independent claim 44 is maintained.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment.

Respectfully submitted,
COATS & BENNETT, P.L.L.C.

By: 

John R. Owen
Registration No. 42,055
Telephone: (919) 854-1844

CERTIFICATE OF MAILING

I HEREBY CERTIFY THAT THIS DOCUMENT IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL, POSTAGE PREPAID, IN AN ENVELOPE ADDRESSED TO: **BOX NON-FEE AMENDMENT, COMMISSIONER FOR PATENTS, WASHINGTON, D.C. 20231.**

SIGNATURE: _____

DATE: 14 Dec 2001

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the specification:

Paragraph beginning on page 3, line 15:

The measurement reports provided by the mobile station give the base station a list of the signal strength and possibly channel quality from adjacent cells, as measured by the mobile station at its present location. The network also knows which adjacent cells have unused radio channels that are available for allocation during a handoff. From the list of available channels, the network selects the cell which best will handle the call from a service quality and an overall interference point of view based on signal strength and bit error rate. A suitable traffic channel is assigned that cell as the target, and the mobile station is commanded to [return] retune to the traffic channel in the target cell. At the same time, the call is switched by the MSC to the base station currently serving the mobile station to the base station in the target cell. The mobile station switches to the newly assigned channel during one of the idle periods so there is no interruption in transmission. Thus, from the user's perspective, the handover is seamless.

Paragraph beginning on page 10, line 21:

According to the present invention, the mobile station 16 is programmed to vary the frequency at which channel quality measurements are made based on the position of the mobile station 16, or some function of that position. For example, the mobile station 16 may be programmed to determine its position relative to the currently serving base station 12 and vary the frequency of the channel quality measurements as a function of the distance from the serving base station 12. In this case, the frequency of channel quality measurements would increase as the distance from the serving base station

increased. In another embodiment, the mobile station 16 may determine its position relative to the serving base station 12 and a target base station 12 in a neighboring cell and vary the frequency of measurement as a function of the distance from both base stations 12. In this case, the frequency of reporting may be dependent on the ratio of the distances between the serving base station and the target base station 12. Another embodiment would be to monitor the position of the base station 12 and vary the frequency of channel quality measurements based on the mobility of the mobile station 16. For purposes of this application, the term mobility is defined to be any function of position and time, such as the rate of change in position of the mobile station 16 over time. Another example of mobility would be the amount of time the mobile station 16 stays in one position. In this case, the frequency of channel quality measurements would increase with increasing mobility.

Paragraph beginning on page 12, line 9:

To implement the present invention, the mobile station 16 must estimate its position periodically. The need to estimate position may potentially conflict with the objective of saving battery life while in idle mode. However, there may be other applications that dictate the need for position estimates, such as for acquiring a position used in emergency calling. Furthermore, the frequency of making position estimates may be one or more magnitudes less than channel selection measurements. If no mobility is detected and hence, very infrequent neighbor list measurements and position estimates are made, there is a net gain in battery life. During active mode, the object is to minimize required frame stealing and not the frequency of measurement per se. Hence, during active mode, the battery drain due to performing position estimates is a secondary issue.

Paragraph beginning on page 14, line 13:

Assuming a call is not received or the mobile station 16 is not required to set up a new call (block 116), the mobile station 16 downloads neighbor lists from the serving base station, and perhaps, lists from other base stations providing signals of sufficient strength and quality (block 120). During this process, the mobile station 16 periodically determines its position or mobility (block 122). Based on this determination, the mobile station 16 monitors the channels from the neighbor list with a frequency depending position or mobility (block 124). As discussed further below, the mobile station 16 may receive access to information bearing on the position of the serving and surrounding base stations as well as coordinates defining areas served by select channels within a cell. Given certain or all of this information, the mobile station 16 may control the frequency of measurements and the channels to measure based on its relative position to a single base station, relative position between two base station<u>s</u>, or its relative position within a defined area or cell.

<u>In the claims:</u>

5. The channel selection method of claim [7] <u>4</u> wherein said position of said at least one additional base station is included in a neighbor list transmitted to said mobile station by said first base station.